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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/073,312

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Tetsuo Sasaki

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4469

7590

08/25/2004

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EXAMINER

DIMYAN, MAGID Y


ART UNIT

PAPER NUMBER

2825

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/073,312	<b>Applicant(s)</b> SASAKI ET AL.	
	<b>Examiner</b> Magid Y Dimyan	<b>Art Unit</b> 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2004.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 8 is/are rejected.
- 7) ☒ Claim(s) 4-7 and 9-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some    \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Acknowledgement***

1. Receipt is acknowledged to the Amendments, and to the Remarks, in response to the Office Action. Both were filed on June 30, 2004. It is also acknowledged that the amendments made to the specification and to the claims were acceptable to the Examiner to overcome the objections and the 35 USC § 112 rejections cited by the Examiner in the First Office Action. Other grounds for objections to the claims have been found. Also, the arguments made by the Applicants in their Remarks were not persuasive to the Examiner, in order to traverse the 35 USC § 102 rejections of Claims 1 – 3 and 8 of the Office Action as recited below.

### ***Claim Objections***

2. Claims 1, 3, 4, 5, 7, 9, 10, 11, 12, 13, 14 and 15 objected to because of the following informalities: the claims are replete with incomprehensible elements as described, and require more understandable language. Below are some examples, but the Applicants are requested to thoroughly check and correct all the deficient claim language:

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- Claim 1, line 17, delete "said", and insert --each--. Also, the Examiner does not understand the meaning of "**requirement of each flop-flop**" (lines 18 and 19 in claim 1). There is no previous mention of "flip-flop requirements".
- Claim 3, line 2; the Examiner fails to determine whether "said **method**" refers to "**method of designing**", or "**method of adjusting clock timing**".
- Claim 4, lines 3 – 4, delete "said method provides clock timing of each flip-flop, and", and insert --the clock timing of each flip-flop extracts--.
- Claim 4, lines 9 – 13; the Examiner does not understand the meaning of the last statement in the claim "**from among clock timing that said each flop-flop...**". The Applicants are requested to elucidate.
- Claims 5, 10 and 14 do not make sense to the Examiner, and thus require further clarification and restating.
- Claim 7, line 3, delete "said method determines the clock timing of each flip-flop" and insert --the clock timing of each flip-flop is determined--.
- Claim 9, line 11, "adjusting costs by the adjusting methods" is missing a verb between "**costs**" and "**by**". Also, the Examiner does not understand the

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meaning of the entire limitation described on lines 12 – 16 ("**target machine cycles ....**").

- Claim 12 contains the same issues as claim 12, and thus the same objections apply.
- The Examiner does not understand the meaning of the last statement in claim 15, lines 13 – 18 (... **and a first path along which data transmission is impossible in said target machine cycle...**). A restatement of that element is requested.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1 – 3 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,367,060 to Cheng et al (hereinafter, Cheng).

2. Referring to claim 1, Cheng cites a method for designing an IC consisting of (a) dividing the chip into a number of clusters (i.e., areas) and providing clock pins in these clusters (see column 2, lines 1 – 27; column 5, lines 48 – 52); (b) performing clock signal distribution from a clock source to each of the clusters (see Fig. 5); (c) performing adjustment of clock timing for each flip-flop to flip-flop transmission to meet system clock frequency requirements (see Fig. 5; column 9, lines 12 – 24); and (d) balancing the timing by balancing the flip-flops via grouping them together (Figs. 4 and 5; column 4, line 30 to column 5, line 67). Thus, Cheng recites all the elements claimed herein.

3. As per claim 2, see column 4, lines 46 – 48; column 10, lines 17 – 19, which show how the length of a transmission path (i.e., extending wiring length) can affect the propagation delays (i.e., can be used to adjust timing) as claimed herein.

4. Referring to claim 3, see (6) and (7) above, as well as column 4, lines 38 – 45; column 3, lines 38 – 67, which recite other ways of adjusting timing, as claimed.

5. As for claim 8, see (6) above, as well as Fig. 6; column 7, line 59 to column 10, line 33, which recite all the elements of the claim, including means for adjusting clock

timing and means for displaying signal propagation paths (closed loops), as claimed herein.

### ***Allowable Subject Matter***

6. Claims 9 – 15 are allowable if rewritten to overcome the objections cited above.

7. Claims 4 – 7 are objected to as being dependent upon a rejected base claim, but would be allowable if: (a) rewritten in independent form including all of the limitations of the base claim and any intervening claims; and (b) rewritten to overcome the objections cited above.

8. The following is a statement of reasons for the indication of allowable subject matter: these claims pertain to a method of designing an IC that include timing elements and relationships for determining flip-flop to flip-flop path delays that are not disclosed in the references of record.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Response to Arguments***

10. Applicant's arguments filed June 30, 2004 have been fully considered but they are not persuasive. As for the argument that the current application discloses a method of designing an IC in which a chip is divided into a number of areas with a plurality of clock pins provided for each area, Cheng teaches a method of designing an IC in which a chip is divided into a number of balanced "clusters" (i.e., a number of areas). Furthermore, these balanced (defined) clusters contain the clock pins that drive the flip-flops thereby permitting the circuit to be designed with a minimum of delay fluctuations (see Fig. 4; col. 4, lines 20 – 55). As for the argument that the present invention establishes and chooses from a plurality of methods of adjusting clock signal timing,



Cheng teaches using more than one design constraint to balance (adjusts) clock timing (see col. 2, lines 1 – 27), thus rendering all of the Applicants' arguments moot.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magid Y Dimyan whose telephone number is (571) 272-1889. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**ANNETTE M. THOMPSON**  
**PRIMARY EXAMINER**

Magid Y Dimyan  
Examiner  
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20 August 2004